December 6, 2001

TO: William Matthews, Art Unit 3738

FROM: Jeanne Horrigan, EIC-3700

SUBJECT: Search Results for Serial #09/656409

Attached are the search results for "Non-Ocular Circadian Clock Resetting in Humans," including results of an inventor search in foreign patent and four major medical and scitech databases, and prior art searches in foreign patent and sci/tech/medical non-patent databases.

I focused on the application of light on non-ocular areas of the body in humans and mammals in general, and material that is dated before May 12,1 997.

In the results, I included theinventors' articles and patents that deal with circadian rhythms so that you could see at a glance their body of work (at least, the work that was retrievable in the databases I used).

In the results I tagged the items that seemed to me to be most relevant, but ***I suggest that you review all of the results***.

I hope these results are useful. ***Please let me know if you would like me to expand or modify the search or if you have any questions.***

Also attached is a "*Search Results Feedback Form*." Your feedback will help enhance our search services.

Access DB# 56191

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: William Howard Matthews Examiner #: 78879 Date: 12/5/01
Art Unit: 3738 Phone Number 305-0316 Serial Number: 09/656,409
Mail Box and Bldg/Room Location: CP2 2B08 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Non-Ocular Circadian Clock Resetting in Humans

Inventors (please provide full names): Scott S. Campbell
Patricia J. Murphy Cornell Research Found.

Earliest Priority Filing Date: 5/12/97

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Divisional of U.S. Patent No. 6,135,117
5/17/1998

Claims benefit to 60/046,188 5/12/97
60/072,121 1/22/98

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: JEANNE HORRIGAN	NA Sequence (#)	STN
Searcher Phone #: 305-5934	AA Sequence (#)	Dialog ✓
Searcher Location: CP2-2C08	Structure (#)	Questel/Orbit
Date Searcher Picked Up: 12/6	Bibliographic ✓	Dr.Link
Date Completed: 12/6	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 141	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 49	Other	Other (specify)

File 350:Derwent WPIX 1963-2001/UD,UM &UP=200170
File 344:CHINESE PATENTS ABS APR 1985-2001/Oct
File 347:JAPIO OCT 1976-2001/Aug(UPDATED 011203)
File 371:French Patents 1961-2001/BOPI 200147

Set	Items	Description
S1	9	AU="CAMPBELL S S"
S2	50	AU="CAMPBELL S"
S3	39	AU="MURPHY P J"
S4	67	AU="MURPHY P"
S5	**2**	**S1:S2 AND S3:S4**
S6	160	S1:S4 NOT S5
S7	323	CIRCADIAN
S8	0	S6 AND S7

File 348:EUROPEAN PATENTS 1978-2001/NOV W04
File 349:PCT FULLTEXT 1983-2001/UB=20011129,UT=20011122

Set	Items	Description
S1	13	AU="CAMPBELL SCOTT S":AU="CAMPBELL SCOTT SAGER"
S2	4	AU="MURPHY PATRICIA J"
S3	4	S1 AND S2
S4	4	IDPAT (sorted in duplicate/non-duplicate order)
S5	**2**	**IDPAT (primary/non-duplicate records only) [duplicates]**
S6	**9**	**S1:S2 NOT S3 [not relevant]**
S7	918	CIRCADIAN
S8	0	S6 AND S7

5/7/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013684166 **Image available**
WPI Acc No: 2001-168390/200117
Rapid eye movement sleep enhancing method involves exposing non-ocular region which is popliteal fossa, to photic stimulation for specific interval
Patent Assignee: CORNELL RES FOUND INC (CORR)
Inventor: CAMPBELL S S ; MURPHY P J
Number of Countries: 093 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200103751	A2	20010118	WO 2000US18820	A	20000707	200117	B
AU 200060845	A	20010130	AU 200060845	A	20000707	200127	

Priority Applications (No Type Date): US 99143217 P 19990709
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200103751	A2	E	32	A61M-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200060845	A	A61M-000/00	Based on patent WO 200103751

Abstract (Basic): WO 200103751 A2
NOVELTY - The non-ocular region which is popliteal fossa of person, is exposed to photic stimulation for an interval ranging from 15 minutes to 12 hours, for enhancing rapid eye movement (REM) sleep period by 30-200%.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for

rapid eye movement cycle extending method.

USE - For improving cognitive function and performance in healthy individuals of all ages and in individuals suffering from disease or disorder in which mental status is compromised.

ADVANTAGE - Compliance problems with treatment regiment is reduced or eliminated, since light is administered during sleep, thus REM sleep and consequently waking function are enhanced.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of a sock article for controlled delivery of non-ocular light to the top surface of the foot.

Sock article (300)
Housing (310)
Hook-and-loop attachment (320,330)
Light transmissive windows (370,380)
Sock (340)
Sensor (350)
pp; 32 DwgNo 2/6

Derwent Class: P34; S05
International Patent Class (Main): A61M-000/00

5/7/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012203474 **Image available**
WPI Acc No: 1999-009580/199901
Human non-ocular circadian clock resetting method - includes application of non-solar photic stimulation to any non-ocular region of human body during wakefulness or during sleep
Patent Assignee: CORNELL RES FOUND INC (CORR)
Inventor: CAMPBELL S S ; MURPHY P J
Number of Countries: 083 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9851372	A1	19981119	WO 98US9550	A	19980511	199901	B
AU 9874787	A	19981208	AU 9874787	A	19980511	199916	
EP 984815	A1	20000315	EP 98922184	A	19980511	200018	
			WO 98US9550	A	19980511		
US 6135117	A	20001024	US 9746188	A	19970512	200055	
			US 9872121	A	19980122		
			US 9874455	A	19980507		

Priority Applications (No Type Date): US 9872121 P 19980122; US 9746188 P 19970512; US 9874455 A 19980507
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9851372	A1	E	30	A61N-005/00	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9874787	A			Based on patent WO 9851372
EP 984815	A1	E	A61N-005/00	Based on patent WO 9851372

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

US 6135117	A		A61B-019/00	Provisional application US 9746188
				Provisional application US 9872121

Abstract (Basic): WO 9851372 A

The human circadian clock resetting method comprises exposing a non-ocular region of a human subject to a non-solar photic stimulation during one or more circadian cycles to reset the human circadian clock. The method includes assessing assessing a time when a daily minimum body temperature for the human subject occurs. The exposure of the non-ocular region begins at an exposure time dependent upon the assessed time. Preferably, the exposure begins before the assessed time. The exposure of the non-ocular region may begin within about six hours prior to the assessed time, after the assessed time or within six hours after the assessed time. Preferably, the method involves non-ocular exposure to light in a range from about 15 minutes to about 12 hours, and most preferably for a duration of 3 hours. Preferably, the photic stimulation has an intensity in the range of 15 to 150,000 lux, and most preferably in the range from 10,000 to 13,000 lux.

USE - For treatment of e.g. seasonal affective disorder, jet lag, shift work sleep disorder, and types of insomnia.

ADVANTAGE - Light treatments can be administered during sleep. Patients are not required to remain stationary and to stare at lights for extended periods.

Dwg.1/7

Derwent Class: P31; P34; S05

International Patent Class (Main): A61B-019/00; A61N-005/00

File 155:MEDLINE(R) 1966-2001/Dec W5
File 5:Biosis Previews(R) 1969-2001/Dec W1
File 73:EMBASE 1974-2001/Dec W1
File 34:SciSearch(R) Cited Ref Sci 1990-2001/Dec W2
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

Set	Items	Description
S1	35	AU="CAMPBELL S S"
S2	45	AU="CAMPBELL S.S."
S3	112	AU="CAMPBELL SS"
S4	25	AU="CAMPBELL SCOTT S"
S5	114	AU="MURPHY P J"
S6	1	AU="MURPHY P JAMES"
S7	368	AU="MURPHY PJ"
S8	125	AU="MURPHY P.J."
S9	16	AU="MURPHY PATRICIA J"
S10	52	S1:S4 AND S5:S9
S11	19	S10/2000 OR S10/2001
S12	21	S10/1999 OR S10/1998
S13	12	S10 NOT S11:S12
S14	**3**	**RD (unique items)**
S15	737	S1:S9 NOT S10
S16	124728	CIRCADIAN
S17	84	S15 AND S16
S18	1	S17/2001 OR S17/2000
S19	3	S17/1999 OR S17/1998
S20	80	S17 NOT S18:S19
S21	31	RD (unique items)
S22	**31**	**Sort S21/ALL/PY,D**

14/6/1 (Item 1 from file: 155)
09476617 97463486 PMID: 9322266
Nighttime drop in body temperature: a physiological trigger for sleep onset?

Jul 1997

14/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
09246621 97114457 PMID: 8956206
Enhanced performance in elderly subjects following bright light treatment of sleep maintenance insomnia.
Murphy PJ ; Campbell SS
Department of Psychiatry, Cornell Medical College, New York, USA. pjmurphy@med.cornell.edu
Journal of sleep research (ENGLAND) **Sep 1996,** 5 (3) p165-72, ISSN 0962-1105 Journal Code: CMG
Contract/Grant No.: K02MH01099, MH, NIMH; P20MH49762, MH, NIMH; R01MH45067, MH, NIMH; +
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Sixteen older individuals with sleep maintenance insomnia were treated with night-time bright-light exposure (BL) while living at home. Twelve consecutive days of acute light treatment were followed by a 3-mo maintenance light-treatment period. Subjects completed laboratory evaluation sessions on five separate occasions (prior to and following the acute light-treatment period, and once per month during the maintenance period). During each laboratory session, performance levels, sleep, and core body temperature were measured. The performance battery consisted of four computerized tasks (Logical Reasoning, Stroop Congruency, Two Letter Visual Search, and Wilkinson Four-Choice Reaction Time) and was administered every 2 h between 10.00 and 18.00 hours. Subjects improved significantly on three of the four tasks from pre-BL to post-BL. During the maintenance period, subjects who received active BL treatment maintained significantly higher performance levels than a control BL group. Light treatment improved sleep efficiency and delayed the phase of the body temperature rhythm. Performance improvements were significantly related only to sleep and not to circadian phase. The implications for non-circadian treatments of sleep maintenance insomnia and cognitive functioning in the elderly are discussed.
Record Date Created: 19970228

14/7/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
09118392 97142032 PMID: 8988282
Physiology of the circadian system in animals and humans.
Murphy PJ ; Campbell SS
Department of Psychiatry, New York Hospital-Cornell Medical Center, White Plains 10605, USA.
Journal of clinical neurophysiology (UNITED STATES) Jan 1996, 13 (1) p2-16, ISSN 0736-0258 Journal Code: HSP
Contract/Grant No.: K02 MH01099, MH, NIMH; P20 MH49762, MH, NIMH; R01 MH45607, MH, NIMH; +
Languages: ENGLISH
Document type: Journal Article; Review; Review, Tutorial
Record type: Completed
Virtually all organisms have developed an internal timing system capable of reacting to and anticipating environmental stimuli with a program of appropriately timed metabolic, physiologic, and behavioral events. The predominant biological rhythms coincide with the geophysical cycle of day and night-the circadian rhythms. The suprachiasmatic nuclei comprise the primary pace-maker in mammals, exhibiting the properties fundamental to a rhythm-generating structure. This article summarizes recent research that has

elucidated mechanisms of signal transduction within the circadian system. The roles of various neurochemicals and hormones in transmitting the circadian timing signal are described. Properties of the circadian system, including photic and nonphotic entrainment, phase response curves, masking, and the intrinsic variability in the system are discussed. (110 Refs.)
Record Date Created: 19970207

22/6/1 (Item 1 from file: 73)
06349623 EMBASE No: 1996013095
Nonsteroidal anti-inflammatory drugs alter body temperature and suppress melatonin in humans
1996

22/6/2 (Item 2 from file: 155)
08657172 96066122 PMID: 7481411
Effects of timed bright-light exposure on shift-work adaptation in middle-aged subjects.
Jul 1995

22/6/3 (Item 3 from file: 155)
08572548 95359485 PMID: 7632990
Light treatment for sleep disorders: consensus report. VII. Jet lag.
Jun 1995

22/6/4 (Item 4 from file: 155)
08572547 95359484 PMID: 7632989
Light treatment for sleep disorders: consensus report. VI. Shift work.
Jun 1995

22/6/5 (Item 5 from file: 155)
08572546 95359483 PMID: 7632988
Light treatment for sleep disorders: consensus report. V. Age-related disturbances.
Jun 1995

22/6/6 (Item 6 from file: 155)
08572545 95359482 PMID: 7632987
Light treatment for sleep disorders: consensus report. IV. Sleep phase and duration disturbances.
Jun 1995

22/6/7 (Item 7 from file: 155)
08572544 95359481 PMID: 7632986
Light treatment for sleep disorders: consensus report. III. Alerting and activating effects.
Jun 1995

22/6/8 (Item 8 from file: 155)
08572543 95359480 PMID: 7632985
Light treatment for sleep disorders: consensus report. II. Basic properties of circadian physiology and sleep regulation.
Jun 1995

22/6/9 (Item 9 from file: 155)
08572542 95359479 PMID: 7632984
Light treatment for sleep disorders: consensus report. I. Chronology of seminal studies in humans.

Jun 1995

22/6/10 (Item 10 from file: 5)
09258111 BIOSIS NO.: 199497266481
Rapid decline in body temperature before sleep: Fluffing the physiological pillow?
1994

22/6/11 (Item 11 from file: 155)
08453193 95267829 PMID: 7748919
Sleep in non-institutionalized Alzheimer's disease patients.
Dec 1994

22/6/12 (Item 12 from file: 155)
08076171 93340373 PMID: 8340561
Alleviation of sleep maintenance insomnia with timed exposure to bright light.
Aug 1993

22/6/13 (Item 13 from file: 155)
07995007 94120298 PMID: 8290857
When the human circadian system is caught napping: evidence for endogenous rhythms close to 24 hours.
Oct 1993

22/6/14 (Item 14 from file: 5)
08299978 BIOSIS NO.: 000043054976
CIRCADIAN FACTORS IN HUMAN HEALTH AND PERFORMANCE ELECTROMAGNETIC FIELDS AND CIRCADIAN RHYTHMICITY
1992

22/6/15 (Item 15 from file: 73)
05139373 EMBASE No: 1992279589
Aging young sleep: A test of the phase advance hypothesis of sleep disturbance in the elderly
1992

22/6/17 (Item 17 from file: 5)
07388466 BIOSIS NO.: 000040014125
CIRCADIAN RHYTHMS AND HUMAN TEMPORAL EXPERIENCE
1990

22/6/19 (Item 19 from file: 155)
06957619 90288288 PMID: 2356398
Bright light treatment: are we keeping our subjects in the dark?
Jun 1990

22/6/20 (Item 20 from file: 155)
05443191 89161026 PMID: 2493655
Lithium delays circadian phase of temperature and REM sleep in a bipolar depressive: a case report.
Jan 1989

22/6/21 (Item 21 from file: 155)
05370217 90139376 PMID: 2616705
Evidence for circadian influence on human slow wave sleep during daytime sleep episodes.

Sep 1989

22/6/22 (Item 22 from file: 155)
05352457 90084150 PMID: 2595176
Gender differences in the circadian temperature rhythms of healthy elderly subjects: relationships to sleep quality.
Dec 1989

22/6/23 (Item 23 from file: 155)
05916033 88218086 PMID: 3368532
Exposure to light in healthy elderly subjects and Alzheimer's patients.
1988

22/6/24 (Item 24 from file: 434)
07954968 Genuine Article#: G3626 Number of References: 21
EVOLUTION OF SLEEP STRUCTURE FOLLOWING BRIEF INTERVALS OF WAKEFULNESS

22/6/25 (Item 25 from file: 5)
05782378 BIOSIS NO.: 000034005527
ULTRADIAN AND CIRCADIAN COMPONENTS OF THE SLEEP-WAKE CYCLE
1987

22/6/26 (Item 26 from file: 155)
05122922 88302622 PMID: 3454422
Depressing normal sleep: two tests of the Process S deficiency hypothesis.
1987

22/6/27 (Item 27 from file: 155)
06247610 87033146 PMID: 3771301
Estimation of empty time.
1986

22/6/28 (Item 28 from file: 155)
04957337 85288452 PMID: 4030422
Napping behavior during "spontaneous internal desynchronization": sleep remains in synchrony with body temperature.
1985

22/6/29 (Item 29 from file: 155)
04589545 85062171 PMID: 6504414
Animal sleep: a review of sleep duration across phylogeny.
Fall 1984

22/6/30 (Item 30 from file: 155)
04542065 84145359 PMID: 6701239
Duration and placement of sleep in a "disentrained" environment.
Jan 1984

22/6/31 (Item 31 from file: 434)
05374825 Genuine Article#: RJ822 Number of References: 18
RELATIONSHIPS IN SLEEP CHARACTERISTICS OF IDENTICAL AND FRATERNAL-TWINS

22/9/16
DIALOG(R)File 155:MEDLINE(R)
06826517 92188067 PMID: 1798884
Timed exposure to bright light improves sleep and alertness during simulated night shifts.

Dawson D; Campbell SS
Department of Psychiatry, Cornell University Medical College, White Plains, New York.
Sleep (UNITED STATES) Dec 1991, 14 (6) p511-6, ISSN 0161-8105 Journal Code: SWS
Contract/Grant No.: MN45067, PHS
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

Many of the health and safety problems reported by shift workers result from the chronic sleep deprivation associated with shorter, fragmented daytime sleep. This reduction in the quality and duration of sleep has been attributed to a change in the phase relationship between the work period and the circadian system, timing the propensity for sleep and wakefulness. **This study examined the extent to which appropriately timed exposure to bright light would accelerate the circadian readjustment of physiological parameters** thought to contribute to impaired performance in shift workers. A control (n = 7) and treatment group (n = 6) underwent a 3-day transition to simulated night work. The treatment group received a single 4-hour pulse of bright light (6,000 lux) between 2400 and 0400 hours on the first night shift and dim light (less than 200 lux) for the remainder of the study. The control group received dim light throughout. By the third night shift, the phase position of the core body temperature rhythm for the treatment group had delayed by 5-6 hours whereas the control group had delayed by only 2-3 hours. When compared to the control group, the greater delay in core temperature rhythm for the treatment group was associated with significantly higher alertness across the night shift and improved sleep quality during the day. By the third day sleep, mean sleep efficiency in the treatment group was not significantly different from normal night sleep. Similarly, onshift alertness was improved relative to the control group. The treatment group did not show the typical decline in alertness observed in the control group between 0300 and 0700 hours. **These data indicate that a single 4-hour pulse of bright light between midnight and 0400 hours is effective in ameliorating the sleep and alertness problems associated with transition to night shift.**

Record Date Created: 19920415
Tags: Female; Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
Descriptors: *Circadian Rhythm--physiology--PH; *Light; *Sleep Stages--physiology--PH; *Wakefulness--physiology--PH; *Work Schedule Tolerance; Adolescence; Adult; Arousal--physiology--PH; Attention--physiology--PH; Body Temperature Regulation--physiology--PH; Cerebral Cortex--physiopathology--PP; Electroencephalography

22/9/18
DIALOG(R)File 155:MEDLINE(R)
07292913 91074879 PMID: 2255738
Enhancement of nighttime alertness and performance with bright ambient light.
Campbell SS; Dawson D
Institute for Circadian Physiology, Boston, MA 02215.
Physiology & behavior (UNITED STATES) Aug 1990, 48 (2) p317-20, ISSN 0031-9384 Journal Code: P72
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Subfile: INDEX MEDICUS

Objective levels of alertness and performance efficiency were measured in

twenty-five healthy young adults during two simulated night shifts. Following the first night shift, during which all subjects worked under dim ambient light (10-20 lux), subjects were assigned to one of three ambient lighting conditions (10-20 lux, 100 lux or 1000 lux) for the second night of work. Subjects exposed to 1000 lux ambient light maintained significantly higher levels of alertness across the 8-hour shift than did subjects exposed to the dimmer lighting conditions. Cognitive performance was also significantly enhanced under the bright light condition, whereas simple reaction time was not. The findings indicate clearly that ambient lighting levels can have a substantial impact on nighttime alertness and performance and that bright ambient illumination may be effective in maintaining optimal levels of alertness during night shift operations.
Tags: Female; Human; Male; Support, Non-U.S. Gov't
Descriptors: *Arousal; *Attention; *Circadian Rhythm; *Light; *Problem Solving; *Psychomotor Performance; Adult; Work Schedule Tolerance
Record Date Created: 19910124

File 34:SciSearch(R) Cited Ref Sci 1990-2001/Dec W2
File 71:ELSEVIER BIOBASE 1994-2001/Dec W1
File 73:EMBASE 1974-2001/Dec W1
File 76:Life Sciences Collection 1982-2001/Nov
File 155:MEDLINE(R) 1966-2001/Dec W5
File 266:FEDRIP 2001/Oct
File 340:CLAIMS(R)/US Patent 1950-01/Dec 04
File 349:PCT FULLTEXT 1983-2001/UB=20011129,UT=20011122
File 351:Derwent WPI 1963-2001/UD,UM &UP=200170
File 440:Current Contents Search(R) 1990-2001/Dec W3
File 654:US PAT.FULL. 1990-2001/Dec 04

Set	Items	Description
S1	13	CIRCADIAN(S)LIGHT AND NON()OCULAR
S2	8	RD (unique items)
S3	3	S2/1999 OR S2/1998
S4	4	S2/2000 OR S2/2001
S5	**2**	**S2 NOT S3:S4**

5/7/1 (Item 1 from file: 266)
DIALOG(R)File 266:FEDRIP

00345553
IDENTIFYING NO.: 5M01RR00048-40 0374 AGENCY CODE: CRISP
Circadian and physiological responses to extraocular light presentation
PRINCIPAL INVESTIGATOR: ZEE, PHYLLIS C
ADDRESS: NORTHWESTERN UNIVERSITY MEDICA 303 E. CHICAGO AVENUE
PERFORMING ORG.: NORTHWESTERN UNIVERSITY, CHICAGO, ILLINOIS
SPONSORING ORG.: NATIONAL CENTER FOR RESEARCH RESOURCES
FY : 2001 TYPE OF AWARD: Noncompeting Continuation (Type 5)
SUMMARY: Bright light is an important synchronizing agent for the circadian system in humans. Light information reaches the circadian clock (suprachiasmatic nucleus) from the retina via the retinohypothalamic tract and the lateral geniculate body. **There is now evidence that the circadian clock receives photic information from non-ocular sources. Recent research has shown that bright light exposure (using bilirubin blankets) to the popliteal region has phase shifting effects on circadian rhythms.** The proposed research study will first, determine whether exposure to bright light to the popliteal region, using a novel and practical light source, will have phase shifting effects on the circadian rhythms of core body temperature and melatonin. Secondly, we will

test the hypothesis that extraocular light will result in central nervous system activation as evidenced by changes in the electronencephalogram (EEG) and physiological measures such as heart rate and skin temperature.

5/7/2 (Item 2 from file: 266)
DIALOG(R)File 266:FEDRIP
Comp & dist by NTIS, Intl Copyright All Rights Res. All rts. reserv.
00336926
IDENTIFYING NO.: 5R01MH45067-13 AGENCY CODE: CRISP
BRIGHT LIGHT TREATMENT OF SLEEP DISTURBANCE IN ELDERLY
PRINCIPAL INVESTIGATOR: CAMPBELL, SCOTT S
ADDRESS: NY HOSPITAL-CORNELL MED CTR 21 BLOOMINGDALE ROAD WHITE PLAINS, NY 10605
PERFORMING ORG.: WEILL MEDICAL COLLEGE OF CORNELL UNIV, NEW YORK, NEW YORK
SPONSORING ORG.: NATIONAL INSTITUTE OF MENTAL HEALTH
FY : 2001 TYPE OF AWARD: Noncompeting Continuation (Type 5)
SUMMARY: DESCRIPTION (Adapted from applicant's abstract): It is widely recognized that changes in the sleep/wake system accompany the aging process. As a consequence, a large proportion of older people complain of significant sleep disturbance-Age-related sleep changes are commonly expressed as shallow and fragmented sleep, and multiple, often prolonged awakenings, particularly in the second half of the night. Few older subjects report difficulties getting to sleep. Therefore, sleep disturbance in people over 65 is generally considered to be a disorder of maintaining, rather than initiating, sleep. Recent evidence indicates that timed exposure to bright light can be effective in managing these age-related sleep changes by acting directly on the circadian timing system. Yet, effectiveness, of light treatment may be compromised by compliance problems associated with the time required for, and the constraints involved in, the treatment regimen. Response to treatment is likely to be affected also by one's recent history of light exposure. Until issues of compliance are fully understood and effectively dealt with, light treatment for age-related sleep disturbance cannot be employed to its full potential.

This COMPETING CONTINUATION will examine three important issues related to compliance: First, it is proposed to quantify the effects of prior light history on the phase-shifting capacity of bright light. Second, a novel procedure for light delivery will be tested, the development of which may hold promise for significantly enhancing user compliance. Finally, an in-home treatment will be implemented which administers light in a manner that may be more acceptable to patients. In the lab-based studies, circadian variables of young (<30 yrs) and older subjects (>65 yrs) will be monitored at baseline, and throughout an interval during which subjects' prior light history is controlled, immediately preceding exposure to 1) a conventionally-administered bright light phase-shifting stimulus, or **2) a bright light phase-shifting stimulus administered using a non-ocular site for phototransduction.** In the treatment study, two groups of healthy, older subjects (>65 yrs) who complain of sleep maintenance insomnia, and whose complaints are verified polygraphically, will undergo either 1) a one-month regimen of timed room-light exposure combined with timed light avoidance, or 2) a well-validated control condition, while living at home and continuing normal daily activities. All three studies address issues crucial to the successful development and implementation of bright light treatment.

File 155:MEDLINE(R) 1966-2001/Dec W5
File 144:Pascal 1973-2001/Dec W1
File 5:Biosis Previews(R) 1969-2001/Dec W1

File 6:NTIS 1964-2001/Dec W3
File 2:INSPEC 1969-2001/Dec W1
File 8:Ei Compendex(R) 1970-2001/Dec W1
File 99:Wilson Appl. Sci & Tech Abs 1983-2001/Sep
File 65:Inside Conferences 1993-2001/Dec W1
File 77:Conference Papers Index 1973-2001/Nov
File 73:EMBASE 1974-2001/Dec W1
File 34:SciSearch(R) Cited Ref Sci 1990-2001/Dec W2
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
File 94:JICST-EPlus 1985-2001/Oct W4
File 35:Dissertation Abs Online 1861-2001/Nov
File 71:ELSEVIER BIOBASE 1994-2001/Dec W1
File 76:Life Sciences Collection 1982-2001/Nov
File 172:EMBASE Alert 2001/Dec W1
File 266:FEDRIP 2001/Oct
File 7:Social SciSearch(R) 1972-2001/Dec W2
File 11:PsycINFO(R) 1887-2001/Nov W3
File 440:Current Contents Search(R) 1990-2001/Dec W3

Set	Items	Description
S1	186916	CIRCADIAN
S2	28625	TWENTY()FOUR()HOUR? ?
S3	1470	NON()OCULAR OR NONOCULAR
S4	2615101	BODY
S5	36484	POPLITE?
S6	1112934	OCULAR OR EYE OR EYES
S7	2673603	LIGHT
S8	8418	S1:S2 AND S3:S5 AND S7
S9	3445	S1(S)S7(S)S3:S5
S10	46	S1(S)(S3 OR S5)(S)S7
S11	17	S10/2000 OR S10/2001
S12	27	S10/1999 OR S10/1998
S13	**2**	**S10 NOT S11:S12 [these are duplicates]**
S14	18089	EXTRA()OCULAR OR EXTRAOCULAR
S15	332	S1 AND S14
S16	255	S15 AND S7
S17	185	S1(S)S14(S)S7
S18	134	S17/2000 OR S17/2001 OR S17/1999 OR S17/1998
S19	50	S17 NOT (S18 OR S10)
S20	30	RD (unique items)
S21	**30**	**Sort S20/ALL/PY,D**
S22	36129	PHOTIC
S23	5	S1(S)(S3 OR S5 OR S14)(S)(S7 OR S22) NOT (S10 OR S17)
S24	**2**	**RD (unique items)**

21/7/24 (Item 24 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

02813159 BIOSIS NO.: 000018046278
EXTRA OCULAR LIGHT RECEPTORS AND CIRCADIAN RHYTHMS
AUTHOR: BENNETT M F
AUTHOR ADDRESS: DEP. BIOL., COLBY COLL., WATERVILLE, MAINE 04901, USA.
JOURNAL: AUTRUM, H. (ED.). **HANDBOOK OF SENSORY PHYSIOLOGY, VOL. 7-6A.** COMPARATIVE PHYSIOLOGY AND EVOLUTION OF VISION IN INVERTEBRATES: A. INVERTEBRATE PHOTORECEPTORS. IX+729P. SPRINGER-VERLAG: BERLIN, WEST GERMANY; NEW YORK, N.Y., USA. ILLUS. ISBN 3-540-08837-7; 0-387-08837-7. 0 (0). 1979. P641-664. **1979**
CODEN: 07637

DOCUMENT TYPE: Review
RECORD TYPE: Citation
LANGUAGE: ENGLISH

21/7/26 (Item 26 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

02714852 BIOSIS NO.: 000068025441
EXTRA OCULAR PHOTO SENSITIVITY
AUTHOR: WOLKEN J J; MOCUS M A
AUTHOR ADDRESS: DEP. BIOL. SCI., MELLON INST. SCI., CARNEGIE-MELLON UNIV., PITTSBURGH, PA. 15213, USA.
JOURNAL: PHOTOCHEM PHOTOBIOL 29 (1). 1979. 189-196. 1979
FULL JOURNAL NAME: Photochemistry and Photobiology
CODEN: PHCBA
DOCUMENT TYPE: Review
RECORD TYPE: Abstract
LANGUAGE: ENGLISH
ABSTRACT: Upon examining the recent literature there are certain relationships of the extra-ocular system (EOC) and behavior that became apparent. **The EOC system functions over the visible range of the electromagnetic spectrum, with some responses occurring in the near-UV and IR. These are observed in** orientation (phototropism, phototaxis), in **circadian rhythms,** locomotor activity and in reproductive processes: functions which are necessary for the animal's survival. The **photoreceptor systems responsible for this kind of photosensitivity are generally referred to as the dermal light sense receptor and the other as the neural receptor-site.** For invertebrates, the dermal light sense may be the direct effect on a photoreceptor pigment spread throughout a specific photosensitive area. Seasonal and circadian effects such as entrainment of a variety of rhythms is seen for both invertebrates and vertebrates. **The behavioral functions may be mediated by the EOC system alone or in conjunction with a developed visual system.** The pineal organ, in vertebrates, is intimately connected with hormonal and reproductive rhythms. The indirect effect of light by the pineal organ is the inhibition of melatonin synthesis. It is believed to be the primary receptor site for the EOC system.

21/7/29 (Item 29 from file: 266)
DIALOG(R)File 266:FEDRIP

00348681
IDENTIFYING NO.: 3M01RR00334-35S1 0560 AGENCY CODE: CRISP
EXTRAOCULAR LIGHT EXPOSURE FOR CIRCADIAN DESYNCHRONY IN BLIND
PRINCIPAL INVESTIGATOR: SACK, ROBERT L
ADDRESS: OREGON HEALTH SCIS UNIV 3181 SW SAM JACKSON PARK RD PORTLAND, OR 97201-3098
PERFORMING ORG.: OREGON HEALTH & SCIENCE UNIVERSITY, PORTLAND, OREGON
SPONSORING ORG.: NATIONAL CENTER FOR RESEARCH RESOURCES
FY : 2001 TYPE OF AWARD: Supplement (Type 3)
SUMMARY: Totally blind people have sleep problems that are caused by desynchronized (non 24-hour) circadian rhythms. Without photic time cues, the internal body clock (circadian pacemaker) tends to "free-run" on about a 24.5 hour cycle; as a result , circadian rhythms move in and out of phase with desired sleep times, causing r ecurrent insomnia and impaired daytime alertness. **It has recently been reported that intense light exposure to the skin is able to reset the circadian pacemaker in humans suggesting that**

extraocular light exposure may be able to synchronize abnormal circadian rhythms in totally blind people. The purpose of this study is to determine whether extraocular light exposure can produce circadian phase shifts in totally blind people with free-running circadian rhythms.

21/7/30 (Item 30 from file: 266)
DIALOG(R)File 266:FEDRIP
Comp & dist by NTIS, Intl Copyright All Rights Res. All rts. reserv.
00334109
IDENTIFYING NO.: 5R01HL64581-03 AGENCY CODE: CRISP
EXTRAOCULAR CIRCADIAN PHOTOTRANSDUCTION IN HUMANS
PRINCIPAL INVESTIGATOR: CAMPBELL, SCOTT S
ADDRESS: CORNELL UNIVERSITY MEDICAL COL 21 BLOOMINGDALE ROAD WHITE PLAINS, NEW YORK 10605
PERFORMING ORG.: WEILL MEDICAL COLLEGE OF CORNELL UNIV, NEW YORK, NEW YORK
SPONSORING ORG.: NATIONAL HEART, LUNG, AND BLOOD INSTITUTE
FY : 2001 TYPE OF AWARD: Noncompeting Continuation (Type 5)
SUMMARY: DESCRIPTION (applicant's abstract): Circadian rhythm sleep disorders and seasonal affective disorder affect a large number of individuals across a wide age range. Timed exposure to bright light shows promise as an effective treatment for alleviation of such sleep and mood disorders which are thought to involve the biological timing system. Yet, light treatment as currently practiced has significant drawbacks in terms of user compliance and efficacious timing of administration. The time-consuming and tedious nature of most light treatment regimens make them difficult for many people to use on a consistent and continuing basis. Moreover, the nature of the endogenous clock's response to light dictates that maximum effects are obtained at times when people are typically asleep.

We have shown that the human circadian clock responds to extraocular light exposure in a manner similar to that when light is presented to the eyes. This finding of extraocular circadian clock resetting in humans offers potentially exciting solutions to the problems currently complicating the therapeutic use of bright light . By eliminating the need to receive light via the retinae, light delivery systems can be made more easily portable, and therefore, less intrusive on users' behavior. Perhaps more importantly, by eliminating the need to receive light through the eyes, treatment regimens conceivably may be implemented even while patients are asleep, thus enhancing ease of use and taking advantage of the most optimal times of light administration.

Yet, before treatment approaches and regimens can be successfully developed and implemented using extraocular sites, it is important to confirm and expand our original findings. This project will take two important steps in this regard: First, we propose to replicate our original study using a larger study sample and more suitable controls. Secondly, it is proposed to characterize the phase response of the circadian clock to extraocular light presented during sleep. In two laboratory-based studies, both using a counter-balanced design, we will examine relevant circadian parameters in a total of 72 healthy young adults during baseline, active and control conditions. These studies address issues crucial to the successful development and implementation of light treatments using extraocular exposure, and they form the basis for a more complete understanding of the role of light in human circadian physiology.

File 98:General Sci Abs/Full-Text 1984-2001/Oct
File 9:Business & Industry(R) Jul/1994-2001/Dec 05
File 16:Gale Group PROMT(R) 1990-2001/Dec 05

File 160:Gale Group PROMT(R) 1972-1989
File 148:Gale Group Trade & Industry DB 1976-2001/Dec 05
File 621:Gale Group New Prod.Annou.(R) 1985-2001/Dec 05
File 636:Gale Group Newsletter DB(TM) 1987-2001/Dec 05
File 441:ESPICOM Pharm&Med DEVICE NEWS 2001/Nov W3
File 20:World Reporter 1997-2001/Dec 06
File 813:PR Newswire 1987-1999/Apr 30
File 15:ABI/Inform(R) 1971-2001/Dec 06
File 88:Gale Group Business A.R.T.S. 1976-2001/Dec 06
File 149:TGG Health&Wellness DB(SM) 1976-2001/Nov W3
File 370:Science 1996-1999/Jul W3
File 442:AMA Journals 1982-2001/Dec B1
File 484:Periodical Abs Plustext 1986-2001/Dec W1
File 570:Gale Group MARS(R) 1984-2001/Dec 05

Set	Items	Description
S1	8760	CIRCADIAN
S2	16488	TWENTY()FOUR()HOUR? ?
S3	312	NON()OCULAR OR NONOCULAR
S4	1588103	BODY
S5	2131	POPLITE?
S6	1406507	OCULAR OR EYE OR EYES
S7	2097052	LIGHT
S8	866	PHOTIC
S9	2092	EXTRAOCULAR OR EXTRA()OCULAR
S10	312	NONOCULAR OR NON()OCULAR
S11	30	S1:S2(S)(S3 OR S5 OR S9)(S)S7:S8
S12	18	RD (unique items)
S13	1	S12/2001 OR S12/2000
S14	15	S12/1999 OR S12/1998
S15	2	S12 NOT S13:S14
S16	1911797	PD=970512:971231
S17	1911797	PD=19970512:19971231
S18	**1**	**S15 NOT S16:S17 [in "titles only" section]**

File 350:Derwent WPIX 1963-2001/UD,UM &UP=200170
File 344:CHINESE PATENTS ABS APR 1985-2001/Oct
File 347:JAPIO OCT 1976-2001/Aug(UPDATED 011203)
File 371:French Patents 1961-2001/BOPI 200147

Set	Items	Description
S1	323	CIRCADIAN
S2	415	TWENTY()FOUR()HOUR? ?
S3	9	NON()OCULAR OR NONOCULAR
S4	1578102	BODY
S5	122	POPLITE?
S6	72181	OCULAR OR EYE OR EYES
S7	1156387	LIGHT
S8	111	PHOTIC
S9	45	EXTRAOCULAR OR EXTRA()OCULAR
S10	**2**	**S1:S2 AND (S3 OR S5 OR S9) AND S7:S8**
S11	13	S1:S2 AND (S4 OR S6) AND S7:S8
S12	**11**	**S11 NOT S10**

10/7/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013617467 **Image available**
WPI Acc No: 2001-101675/200111

Jet lag effect reduction apparatus for intercontinental airline travelers, selects intensity of light from luminaire to bioactively change biological clocks of traveler upon exposure of light

Patent Assignee: PERKINS J (PERK-I); SEKI H S (SEKI-I)
Inventor: PERKINS J; SEKI H S
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6164787	A	20001226	US 98221754	A	19981228	200111	B

Priority Applications (No Type Date): US 98221754 A **19981228**
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6164787	A		7	F21V-033/00	

Abstract (Basic): US 6164787 A

NOVELTY - The apparatus has chair adaptable to receive the traveler (30). **A luminaire is mounted adjacent to front edge of seat pan, and is adaptable to shine light upward and frontward, so that popliteal regions of traveler sitting in the chair, are illuminated. The intensity of light is preselected so as to bioactively change biological clock of traveler upon exposure of popliteal regions of traveler to light.**

DETAILED DESCRIPTION - The seat pan is elevated such that leg of the traveller is bent at knee and extend downwards below the plane of seat pan. An INDEPENDENT CLAIM is also included for description of combination chair and therapeutic lamp.

USE - For adjusting biological clock of intercontinental airline travelers.

ADVANTAGE - Facilitates uses to control the amount, intensity and length of photoexposure. Enables adjusting user's circadian cycle without user's eyes having to be opened. Time need by traveler to adjust to new time zone is reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the part elevation, part schematic block diagram of circadian clock seat.

Traveler (30)

pp; 7 DwgNo 1/5

Derwent Class: Q71; S05; V07; W06; X26
International Patent Class (Main): F21V-033/00

File 348:EUROPEAN PATENTS 1978-2001/NOV W04
File 349:PCT FULLTEXT 1983-2001/UB=20011129,UT=20011122

Set	Items	Description
S1	918	CIRCADIAN
S2	5478	TWENTY()FOUR()HOUR? ?
S3	54	NON()OCULAR OR NONOCULAR
S4	321893	BODY
S5	1003	POPLITE?
S6	58677	OCULAR OR EYE OR EYES
S7	308035	LIGHT
S8	145	PHOTIC
S9	164	EXTRAOCULAR OR EXTRA()OCULAR
S10	**2**	**S1:S2(S)(S3 OR S5 OR S9)(S)S7:S8 [see "titles only" section]**
S11	28	S1:S2 AND (S3 OR S5 OR S9) AND S7:S8
S12	26	S11 NOT S10
S13	26	IDPAT (sorted in duplicate/non-duplicate order)
S14	**26**	**IDPAT (primary/non-duplicate records only) [see "titles only" section]**

TITLES OR TITLES &KWIC FORMAT ONLY
SERIAL 09/656409
December 6, 2001

21/6/2 (Item 2 from file: 5)
10322010 BIOSIS NO.: 199698776928
Cerebral extraocular photoreceptors in ants.
1996

21/6/3 (Item 3 from file: 34)
05688676 Genuine Article#: WQ544 Number of References: 110
Title: Drosophila rhythms: From brain to behavior (ABSTRACT AVAILABLE)
Publication date: 19961200

21/6/4 (Item 4 from file: 155)
08601855 95391870 PMID: 7662867
Photopigments and circadian systems of vertebrates.
Sep-Oct 1995

21/6/5 (Item 5 from file: 76)
01997287 3856419
Extraocular photoreception and circadian locomotor activity rhythms in the blow fly Calliphora vicina
INSECTS: CHEMICAL, PHYSIOLOGICAL AND ENVIRONMENTAL ASPECTS.

21/6/6 (Item 6 from file: 155)
05469990 92089635 PMID: 2519577
The disconnected visual system mutations in Drosophila melanogaster drastically disrupt circadian rhythms.
Spring 1989

21/6/7 (Item 7 from file: 155)
06452404 88244642 PMID: 3379386
Light transducer for the biological clock: a function for rapid eye movements.
1988

21/6/8 (Item 8 from file: 155)
05740173 92103241 PMID: 2979642
Does a biological clock reside in the eye of quail?
Winter 1988

21/6/10 (Item 10 from file: 5)
05645394 BIOSIS NO.: 000083118541
CAUDAL PHOTORECEPTORS SYNCHRONIZE THE CIRCADIAN RHYTHMS IN CRAYFISH I. SYNCHRONIZATION OF ERG AND LOCOMOTOR CIRCADIAN RHYTHMS
1987

21/6/11 (Item 11 from file: 35)
936776 ORDER NO: AAD86-27321
ROLE OF THE EYES, FRONTAL ORGAN AND PINEAL ORGAN IN THE GENERATION OF THE CIRCADIAN ACTIVITY RHYTHM AND ITS ENTRAINMENT BY LIGHT IN THE SOUTH AFRICAN CLAWED FROG, XENOPUS LAEVIS
Year: 1986

21/6/13 (Item 13 from file: 5)

04792808 BIOSIS NO.: 000080095936
CIRCADIAN ACTIVITY RHYTHM OF THE HOUSEFLY MUSCA-DOMESTICA CONTINUES AFTER OPTIC TRACT SEVERANCE AND LOBECTOMY
1985

21/6/14 (Item 14 from file: 5)
04763654 BIOSIS NO.: 000080066781
MELATONIN RHYTHMS IN QUAIL REGULATION BY PHOTOPERIOD AND CIRCADIAN PACEMAKERS
1985

21/6/15 (Item 15 from file: 5)
03910577 BIOSIS NO.: 000075088650
CIRCADIAN RHYTHMICITY IN BULLA-GOULDIANA ROLE OF THE EYES IN CONTROLLING LOCO MOTOR BEHAVIOR
1982

21/6/16 (Item 16 from file: 155)
03698212 82172413 PMID: 7200184
Loss of eye movements abolishes light entrainment of circadian mesolimbic catecholamine excitability: a function for REM?
Feb 7 1982

21/6/18 (Item 18 from file: 5)
03580501 BIOSIS NO.: 000073083582
DISSECTION OF CIRCADIAN ORGANIZATION OF APLYSIA-CALIFORNICA THROUGH CONNECTIVE LESIONS AND ELECTRO PHYSIOLOGICAL RECORDING
1982

21/6/19 (Item 19 from file: 5)
03544102 BIOSIS NO.: 000073047183
CIRCADIAN AND ULTRADIAN ACTIVITY RHYTHMS OF A FRESH WATER GASTROPOD HELISOMA-TRIVOLIS THE EFFECTS OF SOCIAL FACTORS AND EYE REMOVAL
1981

21/6/20 (Item 20 from file: 5)
03300661 BIOSIS NO.: 000072028765
ABSENCE OF EXTRA OCULAR PHOTO RECEPTION IN DIURNAL AND NOCTURNAL RODENTS EXPOSED TO DIRECT SUN LIGHT
1981

21/6/21 (Item 21 from file: 5)
03247008 BIOSIS NO.: 000071060119
MULTIPLE EXTRAOCULAR PHOTO RECEPTIVE AREAS IN GENITALIA OF BUTTERFLY PAPILIO-XUTHUS
1980

21/6/22 (Item 22 from file: 5)
03025859 BIOSIS NO.: 000070051477
LIGHT SENSITIVITY OF THE RHINOPHORES AND EYES OF APLYSIA
1980

21/6/23 (Item 23 from file: 5)
02915710 BIOSIS NO.: 000069023827
CIRCADIAN ORGANIZATION IN APLYSIA EXPLORED WITH RED LIGHT EYE REMOVAL AND BEHAVIORAL RECORDING
1979

21/6/25 (Item 25 from file: 5)
02724506 BIOSIS NO.: 000068035104
PHOTIC SENSITIVITY OF THE RHINOPHORE IN APLYSIA-CALIFORNICA
1979

21/6/27 (Item 27 from file: 155)
02559371 80047350 PMID: 499573
Circadian organization in Aplysia californica.
Nov 1979

21/6/28 (Item 28 from file: 73)
00270755 EMBASE No: 1975043062
Extraocular photoreceptors can entrain the circadian oscillator in the eye of Aplysia
1974

18/6/1 (Item 1 from file: 88)
04073621 SUPPLIER NUMBER: 18805504
Evidence that histamine is a neurotransmitter in an insect extraocular photoreceptor pathway.
Sep, 1996

12/26,K/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2001 Derwent Info Ltd. All rts. reserv.
004610935
WPI Acc No: 1986-114279/198618
In vivo microbiota analysis appts. - uses split laser beams with frequency shifter in one beam
...Abstract (Equivalent): measuring characteristics of a probe of live microbiota comprising (a) means (10) for generating a light beam (11), (b) a beam splitter (12) for splitting said light beam (11) into at least a pair of light beams (13, 14), (c) a means for frequency shifting (20), (d) detection means (41) for detrecting light emanating from said pair of light beams scattered by said probe (40) of live microbiota characterised in that (e) said means for frequency shifting (20) shifts one of the light beams of each of the pairs of light beams by a predetermined amount under 10 kHz relative to the other light beam of the same pair of light beams, (f) a microprocessor (48) is provided in the apparatus, and whereby (g) said means...
...Abstract (Equivalent): Method comprises: (a) recording natural rhythm circadian cycle of live bacteria; (b) subjecting microbiota to predetermined exogenous stimuli at selected point(s) in cycle; and (c) recording change(s) physical movements of body (portions) of microbiota during application of stimuli, by laser light scattering...
...Laser light scattering uses a pair of beams, one of which has been shifted on predetermined frequency related to body movements of microbiota. Stimuli include: magnetic electric, complex electromagnetic, visible light , X-ray, UV, IR, chemical, pressure, sonic r.f. and thermal stimuli...

14/TI/4 (Item 4 from file: 349)
DIALOG(R)File 349:(c) 2001 WIPO/Univentio. All rts. reserv.
TREATMENT OF SLEEP DISORDERS WITH HYPOCRETIN-1